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<b>1. AGENCY USE ONLY (Leave Blank)</b>			<b>2. REPORT DATE</b> June-13-00		<b>3. REPORT TYPE AND DATES COVERED</b> Monthly Progress Report May 1, 2000 - May 31, 2000	
<b>4. TITLE AND SUBTITLE</b>  Monthly Progress Report Wrist Interactive Device for Wearable PC			<b>5. FUNDING NUMBERS</b>  Contract N00421-97-C-1293			
<b>6. AUTHOR(S)</b>  Paolo Dini						
<b>7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)</b>  ViA Inc. 12550 West Frontage Rd. Burnsville, MN 55337			<b>8. PERFORMING ORGANIZATION REPORT NUMBER</b>			
<b>9. SPONSORING/MONITORING AGENCY NAME(S) &amp; ADDRESS(ES)</b>  Charles D. Caposell Code 4.0T Naval Air Systems Command Building 2185, Ste 1190 22347 Cedar Point Rd. Unit #6 Patuxent River, MD 20670-1161			<b>10. SPONSORING/MONITORING AGENCY REPORT NUMBER</b>			
<b>11. SUPPLEMENTARY NOTES</b>						
<b>12a. DISTRIBUTION/AVAILABILITY STATEMENT</b>  Distribution A			<b>12b. DISTRIBUTION CODE</b>			
<b>13. ABSTRACT (Maximum 200 words)</b>						
<b>14. SUBJECT TERMS</b>			<b>15. NUMBER OF PAGES</b>			
			<b>16. PRICE CODE</b>			
<b>17. SECURITY CLASSIFICATION OF REPORT</b> Unclassified		<b>18. SECURITY CLASSIFICATION OF THIS PAGE</b> Unclassified		<b>19. SECURITY CLASSIFICATION OF ABSTRACT</b> Unclassified		
<b>20. LIMITATION OF ABSTRACT</b>						

**Contractor's Progress, Status and Management Report --  
Monthly Progress Report**

**Period Covered by the Report  
1 May through 31 May 2000**

Date of Report: 13 June 2000

Wrist Interactive Device for Wearable PC  
SBIR Phase II Topic N95-137  
Contract No. N00421-97-C-1293  
Dollar Value \$1,708,653

ViA Inc.  
12550 West Frontage Road  
Burnsville, MN 55337

Sponsor  
Charles D. Caposell  
Naval Air Systems Command  
AIR-4.5T

Data Item No. 003  
Contract Reference Item 0003  
Authority - Data Acquisition Documentation No. DI-MGMT-80227  
Monthly Report No. 26  
Issuing Government Activity  
Requiring Office AIR-4.0T

Security Classification - Unclassified

DTIC QUALITY INSPECTED 4

20000630 092

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## 1. Progress & Plans

### **Hardware**

#### Phase 3/4 Boards

The rigid-flex boards were delivered and populated. We found two footprints that did not match the respective parts. One of these is easily resolved, while the other, an adjustable regulator for the core voltage of the SA1110, may require a new package. We are currently searching for a regulator that will fit on the available footprint. At the same time, however, we are attempting to place the larger package on the board and jumper to the pads. This may be a better solution if we don't run into mechanical interference problems.

#### RF

The Moteco antennas have been ordered and delivered. The layout of the Phase 4 RF board has not begun yet, however.

#### Audio

Layout for the Phase 4 audio board has begun.

#### Optics

All design work has been completed for the optics. We are awaiting the rest of the system to be completed to test the optics system performance. All the imaging and Fresnel lenses have been delivered, and beamsplitters are on order.

#### Battery System

The chargers and the battery cells are on order. The layout of the battery board has not begun yet.

#### Switch Board

Layout of the switch board is completed. A perspective view of how it fits in the assembly is shown in Figs. 1 and 2.

#### Mechanical Design

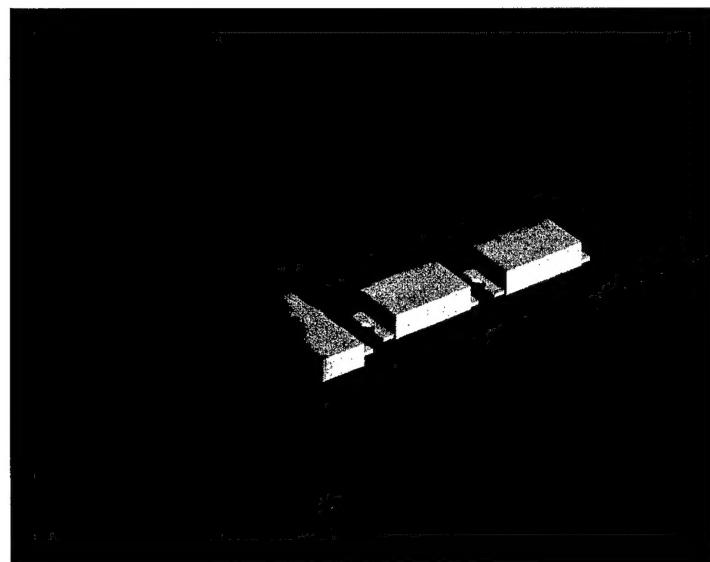
The mechanical design tasks that have been completed are:

- On/Off switches mounting in main case
- Completion of light box design
- Mounting of lens and finalization of plastic case
- Audio module case (see Figs. 3 and 4)

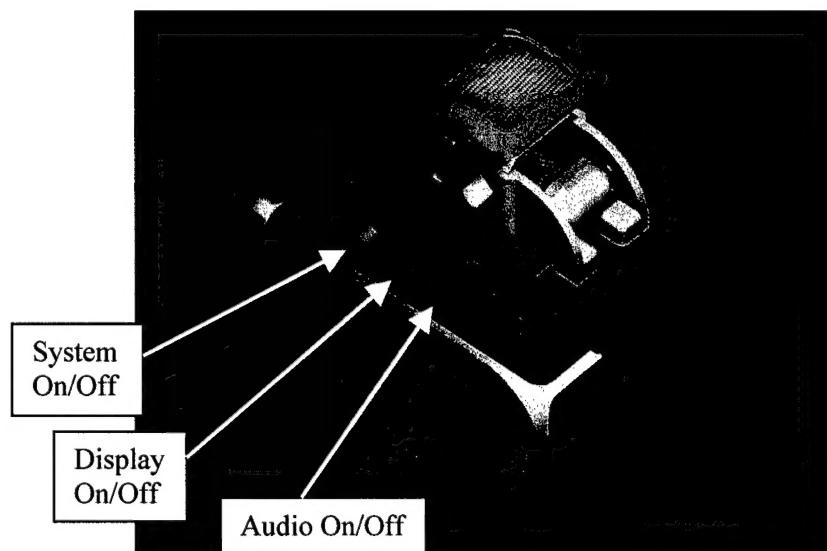
The mechanical design tasks that are currently being worked on are:

- RF module case
- Battery case, battery charger, and attachment to battery module on wrist band
- Wrist band clasp

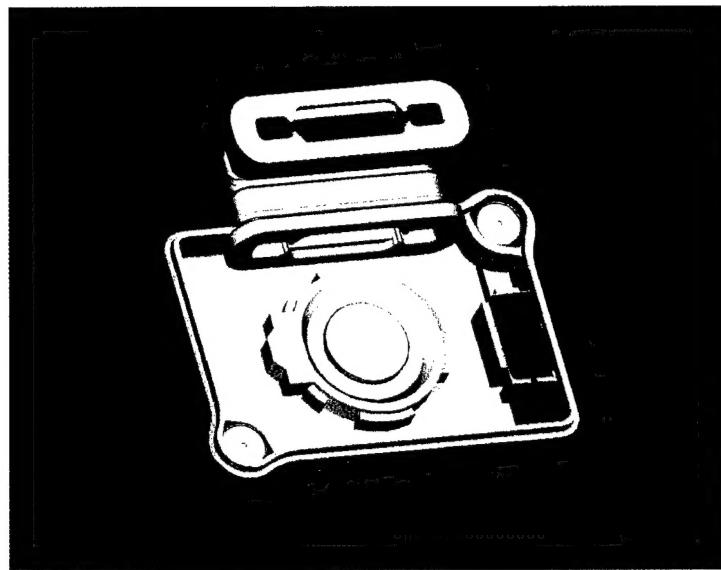
Final mechanical parts of the WID prototypes are being ordered as their design is completed and have been arriving at ViA from the molder every week, as they are built.



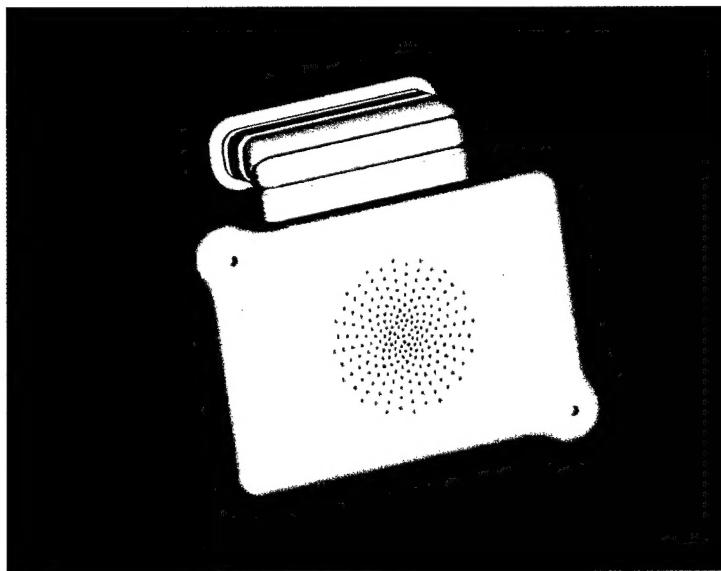
**Fig. 1** Switch assembly



**Fig. 2** Switch board in WID assembly



**Fig. 3 Mounting of speaker and microphones**



**Fig. 4 Audio module case**

## **Software**

### Bluetooth Drivers

The Bluetooth driver for Windows CE is completed.

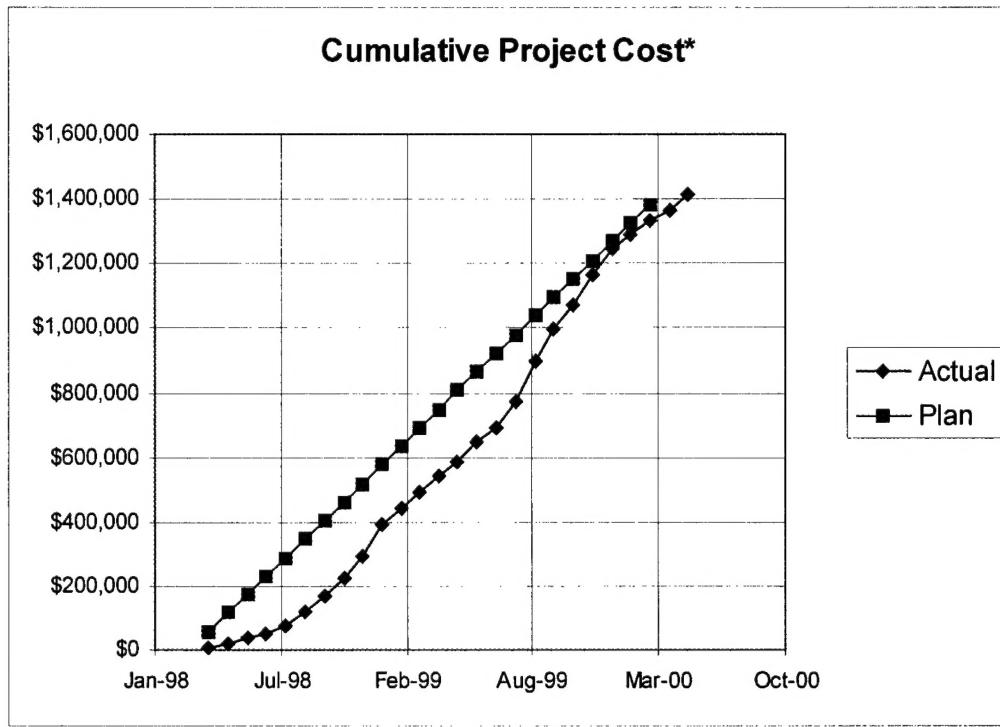
The Bluetooth driver on the Windows 98, host side, is completed.

### Audio Drivers

Work is underway to develop a CE audio driver to allow communication between the StrongARM processor and the DSP. Andrea Electronics is waiting for us to finalize the microphone locations in the audio case in order to fine-tune their phase-filtering software.

### High-Level CE Software

Work has begun on the high-level CE application that re-renders the graphical commands on the WID screen.



\*without G&A and fee

## 2. Project Cost

Cost incurred for the period and total cost, without G&A and Fee:

Current Month's Cost*	Cumulative Cost
\$47,509	\$1,411,866

\* Current month cost is 1 May through 31 May

Person-hours for the period and cumulatively:

Current Month's Hours	Cumulative Hours
469	17,695

## 3. Schedule and Staffing

Notice that the funds expended on this project have now exceeded the amount of the grant. As previously stated, ViA is committed to completing the project and deliver the WID prototypes as agreed upon in the original contract. Work is therefore progressing at a fast pace, with three software engineers, one mechanical engineer, a layout engineer, and the PI logging time to this project.

Dean Oliver, the electrical/RF engineer who developed most of the electrical design for the WID, left ViA in mid-May. Before leaving, however, he completed the electrical design of all the Phase 4 boards, which are now in layout.

Expected delivery of the 8 WID prototypes is in late July, if the Bluetooth Digianswer cards do not have any more schedule slips.

#### **4. Author**

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